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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/602,113

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Eugene F. Young

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APPLIED BIOSYSTEMS
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EXAMINER

HYUN, PAUL SANG HWA

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/602,113	Applicant(s) YOUNG ET AL.	
	Examiner PAUL S. HYUN	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42, 46-48 and 50-54 is/are pending in the application.
 4a) Of the above claim(s) 1-18 and 27-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-26, 38-42, 46-48 and 50-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

REMARKS

Claims 1-42, 46-48 and 50-54 are currently pending. Claims 47, 48, 50, 52 and 53 have been amended. Claims 1-18 and 27-37 remain withdrawn for being directed toward non-elected inventions. In summary, claims 19-26, 38-42, 46-48 and 50-54 are pending for prosecution on the merits.

The amended Drawing sheet and the Specification filed by Applicant has been acknowledged. Consequently, the objections to the Drawings and the Specification cited in the previous Office action have been withdrawn.

The claim rejection under 35 U.S.C. section 112 cited in the previous Office action has been withdrawn in light of the amendments.

Specification

The disclosure is objected to because of the following informalities:

Applicant inserted new paragraph [0038] without renumbering the rest of the paragraphs. In effect, there are two paragraphs designated number [0039].

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims **19-23, 25, 26, 38, 40-42 and 46** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pham et al. (US 6,171,780 B1) in view of Gilby (US 6,239,871 B1) and Igarashi (US 5,083,223).

Pham et al. disclose a multi-well plate comprising a lens formed at the bottom of each well (see Fig. 1B). The lens can be used to focus light into the well wherein the shape and the thickness of the lens can vary depending on the application (see lines 1-11, col. 14). The multi-well plate further comprises a flat cover 30 (see Fig. 3). The plate and the cover can be made from polypropylene (see Table 1, cols. 10-11). The multi-well plate disclosed by Pham et al. differs from the claimed invention in that the reference does not disclose the use of aplanatic lenses.

Gilby discloses an aplanatic lens (planar-convex) for conducting fluorescence measurements. The aplanatic nature of the lens eliminates spherical aberration and allows excitation light to focus on a fluorescent compound and collect the fluorescence emitted by the compound (see Abstract and Figs. 3 and 4). Igarashi discloses a plano-convex lens that is aplanatic (see Fig. 5 and lines 43-54, col. 12). The plano-convex lens comprises a rounded portion and a cylindrically shaped projection opposite the rounded portion. In light of the disclosure of Gilby, it would have been obvious to one of ordinary skill in the art to provide an aplanatic lens to the bottom of each well of the plate disclosed by Pham et al. to eliminate spherical aberration. In light of the disclosure of Igarashi, it would have been obvious to one of ordinary skill in the art to make the

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lens of the multi-well plate plano-convex in shape since plano-convex lenses are aplanatic.

With respect to claim 22, Pham et al. do disclose that the wells of the well-plate can be of any shape (see lines 7-15, col. 10). Therefore, it would have been obvious to taper the wells of the modified well-plate disclosed by Pham et al. and Gilby to facilitate the pipetting of the samples from the wells. Likewise, it would have been obvious to taper the projection portion of the plano-convex lens to accommodate the shape of the tapered wells.

Claim **24** is rejected under 35 U.S.C. 103(a) as being unpatentable over Pham et al. in view of Gilby and Igarashi as applied to claims 19-23, 25, 26, 38, 40-42 and 46, and further in view of Warhurst et al. (US 6,896,848 B1).

None of Pham et al. Gilby and Igarashi disclose a metallic cover.

Warhurst et al. disclose a flat cover adapted to seal the wells of a microtiter plate (see Fig. 1). The reference discloses that the cover can be made from a metal (see lines 65-67, col. 2). In light of the teachings of Warhurst et al., it would have been obvious to one of ordinary skill in the art to provide a metallic cover to the wells of the modified Pham et al. plate since metal is very strong.

Claims **19 and 39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pham et al. in view of Schroeder et al. (US 5,355,215) and as evidenced by Claytor (US 4,787,722).

As indicated above, Pham et al. disclose a microplate comprising a lens at the bottom of each well. However, Pham et al. do not disclose a Fresnel lens.

Schroeder et al. disclose a well-plate for conducting fluorescence measurements. The well-plate comprises Fresnel lenses on the bottom of the wells for exciting and collecting fluorescence (see Fig. 6 and lines 25-45, col. 6). Claytor discloses that Fresnel lenses are inherently aplanatic (see lines 10-15, col. 1). In light of the disclosure of Schroeder et al. and Claytor, it would have been obvious to one of ordinary skill in the art to incorporate Fresnel lenses to the bottom of the wells of the plate disclosed by Pham et al. since Fresnel lenses are aplanatic and thus prevent spherical aberration.

Claims **47, 48 and 50-53** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pham et al. (US 6,171,780 B1) in view of Gilby (US 6,239,871 B1) and Schulte et al. (US 2003/0034306 A1).

Pham et al. disclose a multi-well plate comprising a lens formed at the bottom of each well (see Fig. 1B). The lens can be used to focus light into the well, and the shape as well as the thickness of the lens can vary depending on the application (see lines 1-11, col. 14). The multi-well plate further comprises a flat cover 30 (see Fig. 3). The plate and the cover can be made from polypropylene (see Table 1, cols. 10-11). The multi-well plate disclosed by Pham et al. differs from the claimed invention in that the reference does not disclose the use of aplanatic lenses. In addition, Pham et al. do not disclose a distribution network.

With respect to the aplanatic lenses, Gilby discloses a planar-convex lens for conducting fluorescence measurements. The lens 100 is aplanatic, thus eliminating spherical aberration (see Fig. 3 and Abstract). The aplanatic nature of the lens allows excitation light to focus on a fluorescent compound and collect the fluorescence emitted by the compound (see Fig. 4). In light of the disclosure of Gilby, it would have been obvious to one of ordinary skill in the art to provide an aplanatic lens to the bottom of the wells of the plate disclosed by Pham et al. to eliminate spherical aberration.

With respect to the distribution network, Schulte et al. disclose a microplate comprising a network of channels connecting the wells of the microplate. The channel network facilitates parallel processing of fluids (see claim 32). The network of channels can be formed integral with the wells (see [0028]) and connect to the side of the wells so that optical observation of the wells is not hindered (see [0029]). In light of the disclosure of Schulte et al., it would have been obvious to one of ordinary skill in the art to provide the multi-well plate disclosed by Pham et al. with a network of channels that connect the wells of the microplate so that samples can be processed in a parallel manner.

Claim **54** is rejected under 35 U.S.C. 103(a) as being unpatentable over Pham et al. in view of Gilby and Schulte et al. as applied to claims 47, 48 and 50-53, and further in view of Ravazi et al. (US 7,037,580 B2).

None of Pham et al., Gilby and Schulte et al. disclose a cover made from metal foil.

Ravazi et al. disclose a cover for sealing the wells of a microplate. It is designed to accommodate microplates having standardized well formats. The cover can be made from metallic foil (see claim 2). The cover comprises a means for indicating evidence of tampering (see lines 10-30, col. 1). In light of the disclosure of Ravazi et al. it would have been obvious to one of ordinary skill in the art to seal the wells of the modified Pham et al. microcard with the cover disclosed by Ravazi et al. when storing samples that are susceptible to tampering.

Response to Arguments

Applicant's arguments with respect to the rejection of claims 19-26, 38-42 and 46 have been fully considered but they are not persuasive.

1) Applicant argues that while Pham et al. disclose that the bottom of the microplate can comprise a lens, it is a mischaracterization to construe a single line in the reference as rising to a teaching as there is no further mention of a lens in the reference. This argument is not persuasive because the length of a disclosure is not dispositive of whether a reference provides a teaching. Although the disclosure of Pham et al. directed towards a lens is limited to a single paragraph, the disclosure of the paragraph is sufficiently clear and thorough to constitute a teaching.

2) Applicant also argues that Pham et al. teach away from incorporating a lens having a curved surface to the bottom of the microcard. Specifically, Applicant cites lines 23-25 of column 14, which discloses "if the bottom (of the microcard) is not substantially flat, then the optical quality of the bottom and wells can decrease because of the altered optical and physical properties of one or both". This argument is not

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persuasive for two reasons: 1) The passage cited by Applicant is directed towards surface texture (i.e. roughness/surface irregularities) of the bottom of the microcard, not curvature. 2) Lines 10-11 of column 14 explicitly disclose that the lens can be curved. For the foregoing reasons, the Examiner maintains the position that Pham et al. do not teach away from incorporating a curved lens to the bottom of the microcard.

3) Applicant argues that the lenses disclosed by Gilby, Igarashi and Schroeder are not used in conjunction with a microcard. Therefore, there is no suggestion or motivation in Gilby, Igarashi or Schroeder to incorporate the disclosed lenses to the bottom of a microcard. This argument is not persuasive because one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Pham et al. disclose a microcard comprising a lens at the bottom of each well. The reference discloses that different types of lenses can be used depending on the application (see lines 1-11, col. 14). Based on the disclosure of Pham et al., there is sufficient motivation to incorporate different types of lenses to the bottom of the microcard. Although the lenses disclosed by Gilby and Igarashi are not designed (e.g. size) to be accommodated by a microcard, the Examiner maintains the position that modifying the lenses so that the lenses can be incorporated by the bottom of a microcard is within the endeavor of one of ordinary skill in the art.

4) Applicant argues that the statements made in the Office action with respect to the Claytor reference is based on hindsight. This argument is not persuasive. It should

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be noted that Claytor was cited only to provide evidence that the Fresnel lens disclosed by Schroeder is aplanatic. No motivation or suggestion was derived from the disclosure of Claytor.

Applicant's arguments with respect to claims 47, 48 and 50-54 have been considered but they are moot in view of the new grounds of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL S. HYUN whose telephone number is (571)272-8559. The examiner can normally be reached on Monday-Friday 8AM-4:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul S Hyun/
Examiner, Art Unit 1797

/Jill Warden/
Supervisory Patent Examiner, Art Unit 1797